

myFACTOR The Queen of the Fruits



by J. F. TEMPLEMAN, MD

The Science of Mangosteen

As I start this message, I have just finished my quarterly review of the scientific papers published on the mangosteen and/or its xanthenes. I used to review all the papers published on the other phytochemical classes (proanthocyanidins, catechins, sterols, and polysaccharides etc.) found in the mangosteen as well but since the number of those studies now exceeds 100 articles per quarter, I have had to restrict my field of investigation.



At first glance, the fact that I am examining less mangosteen-related research may seem to be unfortunate but, in reality, it is good news because the reason I cannot keep up to date is that there is now so much new research.



Historically, the first research paper on the mangosteen was published in the 1850's. It was a study on isolating some of the active phytochemicals (xanthenes) in the fruit. The methods used were curious. The investigator fed mangosteen fruit to a camel and then collected its urine. After evaporation, a yellow crystalline solid appeared. Because of the yellow coloring, the substance was called xanthone.

The investigator had already known that the use of the fruit in patients suffering from dysentery (infectious diarrhea) was beneficial. He calculated that it was some element in the fruit that was providing benefit and the camel was his lab tool to extract the possible element.

I shudder to think about the first patients who were treated with the camel urine extract, but, undeniably a useful product resulted from this crude experiment and 'xanthenes' had been discovered.

The next century saw a few more crude patient experiments with the fruit but then, in the late 1960's and in the 70's, when more subtle and efficient separation methods were in place to extract xanthenes, a flurry of scientific activity occurred around the apparent effects of the xanthenes, primarily alpha and gamma mangostin.

It was discovered that xanthenes appeared to possess significant anti-inflammatory properties. From the point of this discovery, it is probably that the scientists' motivation for the studies was to move toward the design of a xanthone-derived pharmaceutical product. At the time, the analysis of natural products as potential sources of compounds to synthesize into drugs was still a major research avenue.

In the next two decades, the pharmaceutical industry moved away from this type of research into the field of designer drugs or products conceived in the laboratory and constructed or designed based on known elements of pathophysiology. Drugs were rarely modeled on natural products during this period and the number of studies into the mangosteen dropped off significantly.

However, in the late 1990's, HPLC or 'high-powered liquid chromatography' proved to be a very powerful and efficient means of separating and identifying natural compounds and interest in the mangosteen and its phytochemicals increased once more.

Antioxidant research flourished when medical experts believed that the oxidation of cholesterol by free radicals was one of the root causes of atherosclerosis or the accumulation of arterial plaque, which led to heart attacks and

strokes. The mangosteen received scientific attention because all of its 43 xanthenes and many of the other classes of phytochemicals in the fruit were all strong antioxidants.

XANGO

This remained the state of mangosteen scientific affairs until 2002 when the Xango Corporation was formed to market the mangosteen as a health supplement. In support of their efforts, the centuries of the use of the fruit in the various traditional medical paradigms of Asia was cited. Additionally, by this time, there were about 45 scientific papers published on the fruit and its xanthenes. In six countries, university scientists had weighed into the effort of investigating the fruit.



About 6 months prior to the founding of Xango, Dr. Morton and I had began in earnest our secondary research into the fruit. Please note that secondary research refers to the effort to track down every study done on the fruit or its xanthenes. Secondary research is thus differentiated from primary research, which takes place in laboratories and hospitals. This primary research is sometimes termed 'bench' research.

These statements have not been evaluated by the FDA. Information herein is NOT intended to be taken as medical advice. No therapeutic or medical claims are either implied or made. DO NOT ALTER ANY MEDICAL TREATMENT, OR THE USE OF MEDICATIONS WITHOUT THE PERMISSION OF YOUR MEDICAL CARE PROVIDER. FDA regulations prohibit the use of therapeutic or medical claims in conjunction with the sale of any product not approved by the FDA.

Annie Jesaulenko Independent Distributor

PHONE **61393159118 or 61418142116**

EMAIL thequeenofthefruit@yahoo.com.au

Annie Jesaulenko has been a Xango Distributor for 8 years.

In this time Annie has achieved 200K Premier Select Status, has been inducted into the Xango "Million Dollar Income Club" and has been named a "Xango Legend".

Annie is very passionate about her Xango business, and the opportunity that Network Marketing provides to change people's lives.

Annie loves the freedom, the incredible lifestyle, the thrill of success and the residual income, that a home based business provides for her and her family.

We travelled to all the universities, except one, where scientific studies had taken place. We sought out other studies in medical university libraries where unpublished research in the form of theses also existed. We spoke to all the scientists involved in the mangosteen research and set about establishing a network among them to facilitate the exchange of ideas and to co-ordinate research efforts.

At first progress was slow. We arranged for the financial sponsorship of a brilliant undergraduate who is now a PhD specializing in mangosteen research. We also suggested topics for possible investigation to a number of the researchers who had already published on the fruit. Over the next five years, the pace of investigations picked up and by 2007 the total number of scientific papers on the mangosteen had doubled.



Today, research is proceeding without the need for Dr. Morton and I to stimulate the effort. Asian, American, and Australian universities are all investigating the mangosteen and its xanthenes. New xanthenes are being constantly discovered and, although I am not satisfied with the methods used, a recent Mexican review paper on the mangosteen cited almost 1,000 xanthenes as being now identified.

To help you appreciate how far we have come, in the first ten months of 2010 there were over 17 new studies on the mangosteen or its xanthenes listed on PUBMED, the most comprehensive database for medical research. While most of these studies delved more deeply into areas previously examined, some studies broke new ground.

In a subsequent newsletter, I will outline some of the more impressive content from the 2010 papers.